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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/814,491	03/31/2004	Gregory S. Sprenger	1-36890	7756

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EXAMINER	
KITOV, ZEEV	

ART UNIT	PAPER NUMBER
2836	

DATE MAILED: 09/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/814,491	SPRENGER ET AL.	
	Examiner	Art Unit	
	Zeev Kitov	2836	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 March 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 - 12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 - 5, 8 - 12* is/are rejected.

7)☒ Claim(s) *6 and 7* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *31 March 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *03/31/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

Applicant's Abstract is not limited to the single paragraph.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

Claims 1 and 12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. A reason for that is use of the phrases “corona discharge”. Where applicant acts as his or her own lexicographer to specifically define a term of a claim contrary to its ordinary meaning, the written description must clearly redefine the claim term and set forth the uncommon definition so as to put one

reasonably skilled in the art on notice that the applicant intended to so redefine that claim term. *Process Control Corp. v. HydReclaim Corp.*, 190 F.3d 1350, 1357, 52 USPQ2d 1029, 1033 (Fed. Cir. 1999). The term "corona discharge" in claims 1 and 12 is used by the claims to mean "charge collection and removal", while the accepted meaning is "a luminous discharge due to ionization of the air surrounding a conductor caused by a voltage gradient exceeding a certain level" (IEEE Authoritative Dictionary). Applicant uses the term "corona discharge" to describe an action of the charge collection and removal from a flammable fluid. A real corona discharge in the flammable fluid can cause explosion. The term is indefinite because the specification does not clearly redefine the term. For purpose of examination it was interpreted as "charge collection and removal".

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 2 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Castellanos et al. (US 6,464,870) in view of Flaynik et al. (US 5,898,560). Castellanos et al. disclose most of the elements of the claim including an apparatus for neutralizing the electrostatic charge in hydrocarbon fluid, including: a mass of filter

material (element 22 in Fig. 2); conductive paths (elements 16 in Fig. 1). As to means for directing the flow of hydrocarbon fluid to be treated through said mass of filter material and in contact with the conductor, they are inherited in the filter structure. The conductive paths collecting and removing the charge from the fluid neutralize the electrostatic charge in the fluid. However, it does not disclose conductive elements branching from an electrical conductor. Flaynik et al. disclose the conductive elements (elements 18 in Fig. 7) branching from an electrical conductor (element 75 in Fig. 7). Both references have the same problem solving area, namely providing the electrostatic discharge to the non-conducting liquids. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the Castellanos et al. solution by adding the branched conductor according to Flaynik et al. because as Flaynik et al. state (col. 5, lines 28 – 43), the irregular shape of the metal objects (branches) allows the static charge to be drained away from the non-conducting fluid. The more irregular shape, the better its interaction with the fluid, since wider area is involved.

Regarding Claim 2, Castellanos et al. disclose the conductor as connected to electrical ground (col. 1, lines 5 – 10).

Regarding Claim 8, Castellanos et al. disclose the electrical conductor formed of an electrically conductive mesh material (element 16 in Fig. 2, col. 3, lines 20 – 23).

Claims 3, 4, 9 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Castellanos et al. in view of Flaynik et al. and Danowski et al. (US 5,076,920). As

was stated above, Castellanos et al. disclose all the elements of Claims 1 and 2. However, regarding Claim 3, they do not disclose the conductor located downstream of the filter. Danowski et al. disclose the conductor (element 36 in Fig. 1) located downstream of said mass of filter material (element 18 in Fig. 1). According to reference, the fuel flows from the inlet cavity (element 42 in Fig. 1) to the outlet cavity (element 28 in Fig. 1), thus leaving the conductor downstream of the filter (element 18 in Fig. 1). Both references have the same problem solving area, namely providing fuel filters protected from electrostatic charges. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the Castellanos et al. solution by placing the conductor downstream of the filter, because as well known in the art, since the fuel is electrostatically charged as a result of moving through the filter mass, placing the charge collecting conductor downstream of the filter would enhance a charge collecting efficiency of the conductor.

Regarding Claim 4, Danowski et al. disclose the conductor as an anti-static cord (element 36 in Fig. 1). Both references have the same problem solving area, namely providing fuel filters protected from electrostatic charges. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have further modified the Castellanos et al. solution by adding the anti-static cord of Danowski et al., because as well known in the art the conductor in such shape as presented by Danowski et al. is cheaper and more convenient in manufacturing and maintenance than the mesh of Castellanos et al.

Regarding Claim 9, Danowski et al. disclose the mesh material as stainless steel (see Abstract). Both references have the same problem solving area, namely providing fuel filters protected from electrostatic charges. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have further modified the Castellanos et al. solution by adding the mesh material of stainless steel according to Danowski et al, because as well known in the art, the stainless steel is a high endurance and rust proof material.

Regarding Claim 11, Castellanos et al. disclose the electrical conductor having electrically connected fibers (element 16 in Fig. 1). As to the conductive fibers being of metal, Danowski et al. disclose the conductor as being made of the stainless steel (see Abstract of Danowski et al.). As to a motivation for modification of the primary reference, it is the same as above.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Castellanos et al. in view of Flaynik et al., Danowski et al. and Bach et al. (US 3,957,264). As was stated above, Castellanos et al. and Danowski et al. disclose all the elements of Claims 1, 4 and 4. However, regarding Claim 5, they do not disclose the conductor as an anti-static tinsel. Bach et al. disclose the discharging conductor as an anti-static tinsel (element 35 in Fig. 2, Abstract, col. 3, lines 59 – 61). Both references have the same problem solving area, namely providing means for discharging a matter. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have further modified the Castellanos et al. solution by adding

the conductive tinsel according to Bach et al., because as well known in the art, the tinsel shape of the conductor helps to cover and therefore discharge larger areas of the matter, than the single wire-type conductor; it makes the discharge process more efficient.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Castellanos et al. in view of Flaynick et al., Danowski et al. and Koch et al. (US 4,999,108). As was stated above, Castellanos et al. disclose all the elements of Claims 1 and 8. However, regarding Claim 10, they do not disclose a perforated tube. Koch et al. disclose the filter material (elements 2 and 3 in Fig. 1) surrounding a centrally disposed perforated tube (element 1 in Fig. 1, col. 2, lines 36 – 43). Additionally, Castellanos et al. disclose the mesh material surrounding at least a portion of the filter and therefore, in combination with the Koch et al., of the perforated tube. Both references have the same problem solving area, namely providing fuel filters protected from electrostatic charges. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have further modified the Castellanos et al. solution by adding the perforated tube located inside the mass of the filter according to Koch et al., because as well known in the art, since the fuel is electrostatically charged as a result of moving through the filter mass, placing the charge collecting perforated conducting tube inside the filter at a half way through the filter would enhance a charge collecting efficiency of the system.

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Miller (US 3,768,659) in view of Castellanos et al. Miller discloses following elements of the claim including central perforated tube (element 50 in Fig. 1); a mass of filter material surrounding the tube (element 16 in Fig. 1). However, it does not disclose an electrical conductor. Castellanos et al. disclose an interdigitated electrical conductor (element 16 in Fig. 1), which will neutralize the charges. As to means for directing the flow of hydrocarbon fluid to be treated through the mass of filter material it is inherent in the filter structure and principle of operation. Both references have the same problem solving area, namely providing fuel filters. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the Miller solution by adding the charge removing electrical conductor according to Castellanos et al., because as well known in the art, the charge accumulated by the fuel passing the filter is to be removed; otherwise a fuel explosion can occur.

As to location of the interdigitated electrical conductor inside the filter assembly, between the tube and the mass of filter material, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have further modified the Miller solution by placing the interdigitated wire between the perforated tube and the mass of filter material, because (i) this way the wire will be positioned downstream of the filter and therefore will have the highest efficiency in removing the charges, (ii) the perforated tube will provide mechanical support for the wire.

Allowable Subject Matter

Claims 6 and 7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. A reason for that is that the claims disclose the discharging conductor having a shape not found in the collected prior art of the record.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Zeev Kitov whose current telephone number is (571) 272 - 2052. The examiner can normally be reached on 8:00 – 4:30. If attempts to reach examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus can be reached on (571) 272 – 2800, Ext. 36. The fax phone number for organization where this application or proceedings is assigned is (703) 872-9306 for all communications.

Z.K.
09/17/2004

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